

DYNAMICS OF COMETARY DUST

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Motions of dust particles observed in comets are primarily determined by their ejection velocity, solar attraction, and solar radiation pressure. This paper reviews recent progress in our understanding of the diversity of cometary dust features (such as jets, fans, halos, and envelopes), which are products of particle ejections from discrete emission regions on the nucleus surface and often contain important information on the comet's spin vector and on the mode of ejection (continuous vs. outbursts). Significant advances in computer simulation of the variety of dust features displayed by comets is summarized and the need for careful diagnostic identification of characteristic dust patterns is emphasized. Further discussed are the problems of dust-tail formation and dust-tail structure (such as streamers and striae) and evidence for dust-particle fragmentation is critically assessed. Finally, also addressed are issues concerning the dynamical modelling of the dust population in Comet Shoemaker -Levy 9, which recently collided with Jupiter.